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EXAMINER

NGUYEN, ANDREW H

ART UNIT

PAPER NUMBER

3741

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/567,174	<b>Applicant(s)</b> ZAGRANSKI ET AL.	
	<b>Examiner</b> ANDREW NGUYEN	<b>Art Unit</b> 3741	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1/12/07</u> .   | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election of Invention I in the reply filed on 10/29/09 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). Claim 12 is withdrawn from consideration.

### ***Oath/Declaration***

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because the inventor signatures are missing.

### ***Specification***

3. The disclosure is objected to because of the following:
  - a. Paragraph 37 (or 39) refers to "NP", which has not been defined.
  - b. Paragraphs 41 and 42 (or 43 and 44) refer, separately, to NPEng2 as being a non-derivative path and a derivative path. How is it both?
  - c. Paragraph 44 (or 46) refers to high side and low side drivers. What are high/low side drivers?

Appropriate correction or explanation is required.

## ***Claim Rejections - 35 USC § 112***

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4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-11 and 13-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 14 recite a "means for providing a desired minimum fuel flow ..." and a "means for shutting off fuel flow". Accordingly, 112 sixth paragraph is invoked. However, the specification does not clearly state the structure by which either of the "means for" are accomplished. It is unclear what structure is required. If Applicant does not wish to have the claim limitation treated under 35 U.S.C. 112, sixth paragraph, applicant is required to amend the claim so that it will clearly not be a means plus function limitation (e.g., deleting the phrase "means for").
6. Claims 1-11 and 13-23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The recitation of a "minimum fuel flow" is indefinite because the claim does not define how the minimum is established. For example, there's a minimum fuel flow for normal operation, a minimum for idle, a minimum for any specific fuel/air ratio, etc.. Essentially, a "minimum fuel flow" can be any amount of fuel flow because it's the minimum to maintain that operation state.
7. The terms "relatively low altitude" and "relatively high altitude" in claims 2 and 15 are relative terms which render the claims indefinite. The terms are not defined by the

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claim. If Applicant wishes to define the terms in claims 2 and 15 by the “10,000 feet” limit, a double patenting rejection would be necessary.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 8, 13-15, and 20 rejected under 35 U.S.C. 102(e) as being anticipated by US 6,996,969 (Dalton).

Regarding claims 1-2 and 13-15:

Dalton teaches a fuel control system that controls fuel flow to the engine during an overspeed condition. Dalton doesn't specifically discuss detecting overspeed, but detection of overspeed is inherent in order for Dalton's device to function - taking action during overspeed must be preceded by a recognition that overspeed is occurring (i.e. detection). Dalton teaches two operating ranges. During one range, a minimum fuel flow is provided to the engine (see col 4 lines 39-56). During a second range, when the engine is “at altitude”, the fuel flow may be shut down entirely (col 5 lines 3-8; “at altitude” considered a “relatively high altitude”; fuel shutdown means is not activated until this condition is met – it is considered disabled).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 8 and 20:

Dalton teaches two solenoid valves – one for the minimum fuel flow condition and one for the fuel shutdown condition (solenoids 120 and 100, respectively).

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 1, 4, 9, 11, 14, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,045,955 (Brannstrom).

Regarding claims 1 and 14:

Brannstrom teaches a fuel control system that detects overspeed. Brannstrom teaches a means for delivering a minimum fuel flow (col 1 lines 15-20) during one operating range and a means for shutting off fuel flow during a second operating range (col 21-28; fuel is shut off when speed reaches a defined limit - this limit can be defined as the second "operating range").

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Regarding claims 4, 9, 11, and 21:

Brannstrom teaches detecting overspeed along two different control paths (see the Figure; first path includes non-derivative logic 15 and derivative logic 17; second path includes non-derivative logic 13). Brannstrom also teaches the overspeed detection based on the power turbine speed signal (see the Figure; power turbine 4).

***Claim Rejections - 35 USC § 103***

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being obvious over US 6,996,969 (Dalton) in view of US 2002/0012071 (Sun).

The applied reference (Dalton) has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application

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and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(l)(1) and § 706.02(l)(2).

Dalton fails to teach that above an altitude above 10,000 feet, the fuel is shut down. Dalton does, however, teach that "at altitude", the fuel is shut down. Sun teaches that in the aircraft industry, aircraft are commonly flown above 10,000 feet and that it is a "mid-altitude". Thus, Dalton's recitation of an aircraft flying "at altitude" could be obviously considered above 10,000 feet, since aircraft are so commonly flown above this limit, as taught by Sun.

Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to make the second operating range above 10,000 feet, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, Dalton defines the second operating range as "at altitude" without specifically defining the range. Finding the appropriate range is considered within the level of ordinary skill in the art.

14. Claims 4, 9-11, 21-23 are rejected under 35 U.S.C. 103(a) as being obvious over US 6,996,969 (Dalton) in view of US 4,045,955 (Brannstrom).

Regarding claims 4, 9-11, and 21-22:



Dalton fails to detail the control system that detects overspeed. However, detecting overspeed is well known in the art and Brannstrom teaches that detecting overspeed along two different control paths was well known in the art (see the Figure; first path includes non-derivative logic 15 and derivative logic 17; second path includes non-derivative logic 13). Brannstrom also teaches the overspeed detection based on the power turbine speed signal (see the Figure; power turbine 4). Dalton also teaches a dual channel system having interchannel communication (1<sup>st</sup> channel 13, second channel including 15 and 17; communicate at 14).

Regarding claim 23:

Dalton teaches a fuel control system that controls fuel flow to the engine during an overspeed condition. Dalton doesn't specifically discuss detecting overspeed, but detection of overspeed is inherent in order for Dalton's device to function - taking action during overspeed must be preceded by a recognition that overspeed is occurring (i.e. detection). Measuring an engine speed parameter is also inherent in order to determine if overspeed is occurring. Dalton teaches two operating ranges. During one range, a minimum fuel flow is provided to the engine (see col 4 lines 39-56). During a second range, when the engine is "at altitude", the fuel flow may be shut down entirely (col 5 lines 3-8; "at altitude" considered a "relatively high altitude"). Since Dalton teaches operating a second mode at altitude, Dalton must inherently sense the altitude in order to determine when to operate the second mode.

Dalton fails to detail the control system that detects overspeed. However, detecting overspeed is well known in the art and Brannstrom teaches that detecting

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overspeed along two different control paths was well known in the art (see the Figure; first path includes non-derivative logic 15 and derivative logic 17; second path includes non-derivative logic 13).

15. Claims 5 and 17 are rejected under 35 U.S.C. 103(a) as being obvious over US 4,045,955 (Brannstrom) in view of US 2003/0107341 (Morris).

Regarding claims 5 and 17:

Brannstrom fails to teach the non-derivative logic including proportional logic and the derivative path including proportional logic. However, shaft speed control systems were well known in the art to comprise proportional logic with both derivative and non-derivative logic, as taught by Morris (paragraph 2; "Known feedback control schemes include proportional, integral, *and/or* derivative control schemes"). It would have been obvious to one of ordinary skill in the art at the time of the invention to use proportional logic with the derivative and non-derivative path of Brannstrom as a matter of obvious design choice, as taught by Morris.

16. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being obvious over US 4,045,955 (Brannstrom) in view of US 5,301,499 (Kure-Jensen)

Regarding claims 6 and 18:

Brannstrom fails to teach reset logic for controlling a latch. However, control systems were well known in the art to use "reset logic" in order reset the system for startup, as taught by Kure-Jensen (col 11 lines 37-56; during a certain condition, "reset")

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is initiated through latch 162). It would have been obvious to one of ordinary skill in the art at the time of the invention to add reset logic with a latch to Brannstrom in order to reset the system for startup.

17. Claims 7 and 19 are rejected under 35 U.S.C. 103(a) as being obvious over US 4,045,955 (Brannstrom) in view of US 6,625,504 (Landreth).

Regarding claims 7 and 19:

Brannstrom fails to teach a software interface for testing performance. However, turbines were well known in the art to have software interfaces in order to monitor testing, as taught by Landreth (col 3 lines 12-20). It would have been obvious to one of ordinary skill in the art at the time of the invention to add a software interface in Brannstrom for testing purposes, as taught by Landreth.

***Double Patenting***

18. Claim 11 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 9. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

***Conclusion***

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANDREW NGUYEN whose telephone number is (571)270-5063. The examiner can normally be reached on Monday - Friday 8 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cuff can be reached on (571)-272-6778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AN/

/Michael Cuff/  
Supervisory Patent Examiner, Art Unit 3741